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SPERRY, R. W., Division of Biology, California Institute of Technology, Pasadena, California. Apposition of visual half-fields after section of neocortical commissures.

Following section of forebrain commissures, right and left halves of the visual field are perceived separately, each of the disconnected hemispheres having its own sensations, images, perceptual associations, and memories, all dissociated from the corresponding visual experiences of the other hemisphere. The boundaries of the two simultaneously perceived visual fields at the vertical meridian were investigated in 3 commissurotomy patients of P. J. Vogel for perceptual gap and overlap. Horizontal rows of 1 to 5 dots were flashed on a screen 18 inches in front of subject's eyes at 1/20 sec. with dots extending across vertical median to appear partly in right, partly in left half field. Subject, using one eye with gaze centered, signalled number of dots seen in each half-field with the corresponding hand and confirmed verbally stimuli seen in right half field. Dots of different size, color, and spacing were used and also letters and vertical lines that projected 15 mm. high, and 4 mm. apart. Lack of significant "overcounts" or "undercounts" indicated a close midline fit of the perceptual half-fields without perceptible gap or overlap beyond the approximately 1.0° range measured. Exact fit for vertical alignment was also indicated in subject's accurate designation of extent and direction of height displacements between right and left horizontal lines. (Supported by NIMH Grant 3372.)